

**New Jersey Department of Transportation  
Bureau of Research  
RESEARCH PROJECT  
Request for Proposals  
2012 Program**

**Date of RFP  
11/2/2011**

**Closing Date  
12/15/2011**

**Landfill Closure with Dredged Material - A Desktop Analysis**

**Project No. 2012-02**

(Proposals must be prepared in accordance with NJDOT's *Information and Instructions for Preparing Proposals*. Please visit:

<http://www.state.nj.us/transportation/refdata/research/pdf/techpropresproj.pdf>

*Revised Proposal Evaluation Forms are available for your information on the website.)*

Proposals will be based on the merit of the information contained in the proposal. Budgets will be evaluated separately. Please place three (3) copies of the budget for this project in a separate sealed envelope.

**1. RESEARCH PROBLEM STATEMENT, BACKGROUND AND OBJECTIVES**

Traditional dredged material placement capacity in New Jersey is extremely limited. Traditionally, materials derived from dredging projects are placed in Confined Disposal Facilities (CDF). A CDF is an upland area that consists of an earthen dike in which dredged material is placed within. The NJDOT has recently inventoried and sampled the existing CDFs and has identified that these existing CDFs are reaching capacity. Without increasing capacity at these sites through the beneficial use of dredged material there is a potential for the reduction of dredging activity, which would negatively affect New Jersey's marine transportation of both recreational and commercial vessels.

Beneficial use of dredged material options must be explored to provide dredged material placement capacity. One beneficial use option for the material stored within a CDF is landfill closure. As listed in the NJDEP landfill database, over 90% of the landfills in New Jersey's Cape May, Atlantic, Burlington, Ocean, and Monmouth Counties that stopped operating prior to 1982 have not been officially closed. These sites have the potential to utilize significant amounts of dredged material in their closure plans. This research will evaluate each landfill site and the feasibility of using dredged material for final closure. As a result, this study will identify and rank the top landfill sites with the highest potential to utilize dredged material during the closure of the landfills.

The NJDOT has identified an area of interest for investigation where there are landfills requiring closure, an abundance of dredged material CDFs, a need for dredged material capacity, and sediment information on the CDFs. The area of interest includes:

- Cape May County
- Atlantic County
- Burlington County (east)
- Ocean County
- Monmouth County

The objective of this research is to conduct an initial feasibility analysis study which will include the following:

- The NJDEP has a landfill database that identifies existing landfills that require closure. The current list is incomplete. The research group is to identify the landfills located in Cape May, Atlantic, Burlington, Ocean, and Monmouth Counties that require closure. Data gaps within the existing attributes will be filled in cooperation with the NJDEP and local government officials. This information will be used to rank the landfill sites and determine prioritization for further investigation.
- Each landfill site parcel will be mapped. A shapefile of the landfill parcels will be created in ArcGIS.
- With the assistance and guidance of the NJDOT and the NJDEP, a rating system will be created to evaluate landfill closure with dredged material and each site will be ranked. Priority landfill sites that have a high feasibility for closure with dredged material will be identified.
- A Phase 1 Environmental Site Investigation will be conducted of the priority sites to identify unknown potential issues or concerns.

The successful completion of the analysis is predicated on obtaining the needed information from the NJDEP, local government officials, and title holders. The team will rely on the NJDOT to obtain cooperation of the NJDEP and local governments to ensure the needed information is obtained.

## 2. TASKS

[Provide a listing of appropriate general tasks divided into phases based on types of work (e.g., laboratory analysis, field) or by year (e.g., Year 1, Year 2) or other appropriate milestones]

*The NJDOT is seeking the insight of proposal responders on how best to achieve the research objectives. Proposers are expected to describe a research effort that can realistically be accomplished as expeditiously as possible. Proposals must present the proposers' current thinking in sufficient detail to demonstrate their understanding of the problem and the soundness of their approach for conducting the required research.*

### **PHASE I – Literature Search**

This work will start with the identification of landfills requiring closure in Cape May, Atlantic, Burlington, Ocean, and Monmouth Counties using the existing NJDEP database, the review of landfill closure requirements, and the review of existing CDF database.

### **PHASE II – Research Approach and Anticipated Results**

Provide a clear description of how you will solve the problem and implement anticipated findings. Work may be divided into phases (e.g., landfill inventory, analysis of the site) as necessary to clarify tasks. Exit criteria must be developed during this phase.

The researchers will expand and complete the existing landfill database that is maintained by the NJDEP for the landfills located in New Jersey's Cape May, Atlantic, Burlington (east), Ocean, and Monmouth Counties. The team will work with state, county, and local officials to populate and verify the database information. The team will map each landfill parcel and the approximate limits of the landfill in ArcGIS.

In cooperation with NJDOT Office of Maritime Resources, NJDEP Economic Growth and Green Energy, NJDEP Solid and Hazardous Waste Management Program and NJDEP Site Remediation Program, the research team will develop a rating system to evaluate the landfill database and prioritize landfills that can utilize dredged material in closure. The rating system will include criteria related to landfill closure and to the use of dredged material for closure as follows:

- Estimated quantity of material needed for closure
- Proximity to CDFs appropriate for providing material for closure
- Cost estimate to utilize dredged material

- Owner(s) willingness to close landfill
- Potential site redevelopment
- Environmental habitat concerns using LANDSCAPE
- Possible remediation action required

Based on the landfill database and rating criteria, the top five landfills that have the highest feasibility for closure with dredge materials will be identified and prioritized.

Site visits shall be conducted at each of the top five priority landfills to obtain additional information related to access, use, and environmental conditions. During the site visit to each of the five priority landfills the research team will conduct a Phase 1 Environmental Site Assessment, based on the standards listed in ASTM E1527-05. With the information gained from the site visits, the priority landfills will be re-evaluated. Using all information gained the research group will describe the top five priority landfills. For each site, the research group will list the benefits and potential issues for closure with dredged materials.

The research team will compile the work completed under this project into a single comprehensive final report.

### **3. IMPLEMENTATION AND TRAINING PLAN**

The PI must meet with the Research Project Selection and Implementation Panel (RPSIP) and other NJDOT units to present the findings and, as appropriate, train these personnel in the use the project results. The PI will develop an implementation plan as per the guidelines provided by NJDOT Research Bureau.

### **4. DELIVERABLES:**

[List of minimum deliverables necessary to complete the project]

- Presentation of Summary of Literature Search Results
- Discussion to Support and Refine the Project Tasks
- Project work plan
- Landfill Database
- Landfill Shapefile
- Technical Memorandum on the survey results
- Technical Memorandum on the measures that are working or not working
- Technical Memorandum on actions taken
- Interim Status reports suitable for Senior Leadership (if required)
- Quarterly Reports and Final Report with appropriate tables, graphs and charts in hard copy version, PDF file format, Word, and on CD ROM. Two copies plus one per RSIP member of each presentation, Technical Memorandum, Draft Final Report and Final Report (10 copies). The Final Report and Tech Brief are due three (3) months before the end date of the project to allow time for review by the Research Project Selection and Implementation Panel. Final Acceptance will be granted upon receipt of ten copies of the approved Final Report.

### **5. CONTRACT TIME:**

Since this research requires quick turn-around solution, it is expected to be completed as soon as possible. The duration of study can be estimated as 12 months, and the final report within 18 months.

**\*Researchers have to keep in mind that this schedule will not go beyond the scheduled date.**

### **6. CONTACTS:**

Upon request, and subject to staff availability, a meeting may be scheduled with interested parties after the RFP's are distributed to refine the objectives and deliverables and to promote a better understanding

of the research needs. Questions on this topic **shall not** be directed to any Research Project Manager, Research Customer, or any other NJDOT person. All questions and answers may be addressed during this meeting (if conducted) or through e-mail. Visit the Bureau of Research website for information about the Bureau of Research. Contact Camille Crichton-Summers before November 14, 2011 ([Camille.CrichtonSummers@dot.state.nj.us](mailto:Camille.CrichtonSummers@dot.state.nj.us)) with RFP related questions or to express your interest in requesting or participating in a pre-proposal meeting.

## **7. DEADLINE**

**Proposals (7 single-bound copies) are due at the NJDOT Bureau of Research  
No later than 4:00 PM 12/15/2011**

**Authorization to Begin Work:** -- To be negotiated

## **8. DELIVERY INSTRUCTIONS:**

**For private, paid messenger services such as Federal Express, DHL, UPS, etc., or for hand-carried deliveries:**

2012 PROPOSAL-NJDOT  
New Jersey Department of Transportation  
Bureau of Research  
1035 Parkway Avenue  
Trenton, New Jersey 08625-0600

**For U.S. Postal Service mail:**

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